

Publications List (Name of Candidate: Dr. Amitesh Kumar)

Patents:

1. **Amitesh Kumar**, Abhinav Gautam, Jaisingh Thangaraj, and Vishnu Priye "An Optical Weighbr with Multiple Optical Load Cells Based on Cantilever Structure for Measuring Weight" Indian patent, **Application no.- 202131058195 (Granted).**
2. **Amitesh Kumar** and Randhir Kumar Sah "Temperature Independent 2-D Optical Tilt Sensor" Indian patent, **Application no.- 202531011041 (Granted).**
3. **Amitesh Kumar**, Deep Pal, Ashish Ranjan Yadav and Jaisingh Thangaraj "Pulmonary Disease Detection using FBG based Optical Spirometer" Indian patent, **Application no.- 202531041270. (Published).**
4. **Amitesh Kumar** and Sanjay Kumar Gupta "Temperature-Independent Fiber Optic Displacement Sensor for Structural Health Monitoring of Underground Coal Mine Roofs and Walls" Indian patent **(Submitted).**
5. **Amitesh Kumar**, Kritika Awasthi and Nishit Malviya "Bow-Tie Shaped Subwavelength Grating Slot Waveguide for Photonics Bio Sensing" Indian patent, **Application no. - 202631039381 (Submitted).**

International Journals:

S.N.	Name of Journal	Pub. Year	Journal Quartile	Research Paper
1.	IEEE Transactions on Instrumentation and Measurement	2022	Q1	Abhinav Gautam and Amitesh Kumar , "Highly Sensitive FBG Based Tilt Sensor Using PM-IM Conversion and EFD Interrogation Technique," in <i>IEEE Transactions on Instrumentation and Measurement</i> , Vol. 71, pp. 1-9, May 11, 2022. DOI: 10.1109/TIM.2022.3172430
2.	IEEE Transactions on Instrumentation and Measurement	2020	Q1	Kumar Kinjalk, Amitesh Kumar and Abhinav Gautam "High-Resolution FBG based Inclination Sensor using Eigen Decomposition of Reflection Spectrum," <i>IEEE Transactions on Instrumentation and Measurement</i> , vol. 69, no. 11, pp. 9124-9131, Nov. 2020. DOI: 10.1109/TIM.2020.2999116
3.	IEEE Sensors Journal	2023	Q2	Deep Pal, Amitesh Kumar , Vikas Kumar, Sakshi Basangar and Pradeep Tomar, "Development of an OTDR-Based Hand Glove Optical Sensor for Sign Language Prediction," in <i>IEEE Sensors Journal</i> , Vol. 24, No. 3, Feb. 01, 2024. DOI: 10.1109/JSEN.2023.3339963
4.	IEEE Sensors Journal	2022	Q2	Deep Pal, Amitesh Kumar , Abhinav Gautam, and Jaisingh T. "FBG Based Optical Weight Measurement System and Its Performance Enhancement Using Machine Learning", <i>IEEE Sensors Journal</i> , Vol. 22, No. 5, 1 March 1, 2022. DOI: 10.1109/JSEN.2022.3144173
5.	IEEE Sensors Journal	2020	Q2	Abhinav Gautam, Kumar Kinjalk, Amitesh Kumar and Vishnu Priye, "FBG Based Respiration Rate Sensing with Arduino Interface," <i>IEEE Sensors Journal</i> , Vol. 20, No. 16, August 15, 2020. DOI: 10.1109/JSEN.2020.2989004
6.	IEEE Sensors Journal	2020	Q2	Abhinav Gautam, Amitesh Kumar , Kumar Kinjalk, Jaisingh Thangaraj, and Vishnu Priye, "A Low-Cost FBG Based Online Weight Monitoring System," <i>IEEE Sensors Journal</i> , Vol. 20, No. 8, April 15, 2020. DOI: 10.1109/JSEN.2019.2961688
7.	Optical Fiber Technology	2022	Q2	Randhir Kumar Sah, Amitesh Kumar , Abhinav Gautam, Vinay Kumar Rajak, "Temperature independent FBG based displacement sensor for crack detection in civil structures", <i>Optical Fiber Technology</i> , Volume 74, 103137, 2022. DOI: 10.1016/j.yofte.2022.103137
8.	Optical Fiber Technology	2020	Q2	Abhinav Gautam, Amitesh Kumar , Jaisingh Thangaraj, Devendra Chack, Vishnu Priye, "Optical weight measurement system using FBG based D-IM edge filter detection", <i>Optical Fiber Technology Elsevier</i> , Nov. 2020. DOI: 10.1016/j.yofte.2020.102386
9.	Optik	2016	Q2	Abhinav Gautam, Amitesh Kumar , R.R. Singh, and Vishnu Priye, " Optical Sensing and Monitoring Architecture for Pipelines using Optical Heterodyning and FBG, Filter", <i>Optik Int. J. Light Electron Elsevier</i>

				Volume 127, Issue 20, (Oct. 2016) Pages 9161–9166. https://doi.org/10.1016/j.jileo.2016.06.133
10.	Optik	2021	Q2	Annapurna Kumari, Amitesh Kumar , Abhinav Gautam, "Photonic generation and theoretical investigation of phase noise in quadrupling and 12-tupling millimeter wave Signal using optical selfheterodyne system", Optik, Int. J. Light Electron Elsevier , Volume 231, Feb. 2021. https://doi.org/10.1016/j.jileo.2021.166432
11.	Journal of Biomedical Optics	2023	Q2	Deep Pal, Amitesh Kumar , Nave Avraham, Yoram Eisenbach, Yevgeny Beiderman, Sergey Agdarov, Yafim Beiderman, Zeev Zalevsky, "Noninvasive Blood Glucose Sensing by Secondary Speckle Pattern Artificial Intelligence Analyses," Journal of Biomedical Optics 28(8) 087001 , August 2023. https://doi.org/10.1117/1.JBO.28.8.087001
12.	Journal of Biomedical Optics	2022	Q2	Deep Pal, Sergey Agadarov, Yevgeny Beiderman, Yafim Beiderman, Amitesh Kumar , Zeev Zalevsky, "Non-invasive Blood Glucose Sensing by Machine Learning of Optic Fiber-based Speckle Pattern Variation," Journal of Biomedical Optics 27(9) 097001 , September 2022. https://doi.org/10.1117/1.JBO.27.9.097001
13.	Solar Energy	2025	Q2	Sumit Sagar, Sagar Bhattarai, Jitendra Kumar, Amitesh Kumar , Samrat Mukhopadhyay, "High-efficiency GaAs solar cells with ordered nano-conical frustum arrays for enhanced light trapping and photovoltaic performance", <i>Solar Energy</i> , Volume 288, 2025. DOI: 10.1016/j.solener.2025.113299
14.	Frontiers in Physics	2021	Q2	Sunil N. Thool, Devendra Chack and Amitesh Kumar "Coherent Detection-Based Optical OFDM, 60 GHz Radio-over-Fiber Link Using Frequency Quadrupling, and Channel and Carrier Phase Estimation" <i>Frontiers in physics</i> , 9:749497, October 2021. https://doi.org/10.3389/fphy.2021.749497
15.	Frontiers in Physics	2023	Q2	Annapurna Kumari, Amitesh Kumar and G. S. T. Reddy, "Performance analysis of the coherent FMCW photonic radar system under the influence of solar noise," <i>Frontiers in Physics</i> , Vol. 11, no. June, pp. 1–14, 2023, doi: 10.3389/fphy.2023.1215160. https://doi.org/10.3389/fphy.2023.1215160
16.	IEEE Transactions on Nanotechnology	2024	Q2	Saurabh Agarwal, Kurmendra, Chandra Prakash, Sumar Kumar Mitra, and Amitesh Kumar , " Ultra-High Quality Factor NOMS Device Incorporating Photonic Crystal Cavity for Femto-Gram Sensing," in <i>IEEE Transactions on Nanotechnology</i> , VOL. 24, pp. 1-7, 2025. DOI: 10.1109/TNANO.2024.3509444
17.	IETE Technical Review	2026	Q3	Kavita Jha, Amitesh Kumar , Randhir Kumar Sah, and Sanjay Kumar Gupta "FBG-Based Strain Sensing for Low-Weight Measurement Applications" <i>IETE Technical Review</i> 43 (5): 638–49, 2026. https://doi.org/10.1080/02564602.2026.2692720
18.	Journal of Optics	2026	Q3	Sumit Sagar, Jitendra Kumar, Amitesh Kumar and Samrat Mukhopadhyay, "Optoelectronic modeling of a thin-film InP solar cell with carrier-selective contacts and double antireflection coatings," <i>Journal of Optics</i> , 2026. https://doi.org/10.1007/s12596-026-03222-y
19.	Applied Optics	2016	Q3	Amitesh Kumar , and Vishnu Priye, "Photonic generation of high frequency millimeter-wave and transmission over optical fiber," Applied Optics (OSA) Vol. 55, No. 22, PP. 5830-5839, 2016. https://doi.org/10.1364/AO.55.005830
20.	Fiber and Integrated Optics	2024	Q3	Saakshi Basangar, Amitesh Kumar , Deep Pal, Kavita Jha, and Vikas Kumar, "Enhanced Detection of Milk Fat Adulteration Using SMS Fiber Sensor Enhanced Detection of Milk Fat Adulteration Using SMS Fiber Sensor," Fiber and Integrated Optics, Taylor & Francis , vol. 00, no. 00, pp. 1–19, 2024. https://doi.org/10.1080/01468030.2024.2442289
21.	Fiber and Integrated Optics	2025	Q3	Randhir Kumar Sah, Amitesh Kumar , and Deep Pal, "Design and Analysis of FBG-Based Vibration Sensor for Low Frequency Applications," Fiber and Integrated Optics, Taylor & Francis , vol. 44, no. 01, pp. 29–49, 2025. https://doi.org/10.1080/01468030.2024.2432244

22.	Applied Optics	2023	Q3	Annapurna Kumari, and Amitesh Kumar , " Impact of laser phase noise on the ranging accuracy of a cooperative MIMO FMCW photonic radar system," Applied Optics (OSA) Vol. 62, No. 36, PP. 9523-9535, 2023. https://doi.org/10.1364/AO.505755
23.	IETE Technical Review	2023	Q3	Kritika Awasthi, Nishit Malviya and Amitesh Kumar , "Silicon Subwavelength Grating Slot Waveguide based Optical Sensor for Label Free Detection of Fluoride Ion in Water," IETE Technical Review, Taylor & Francis , August 2023, doi: 10.1080/02564602.2023.2246429. https://doi.org/10.1080/02564602.2023.2246429
24.	Opto-Electronics Review	2016	Q4	Amitesh Kumar , Vishnu Priye, and R.R. Singh, "All optical measurement of unknown wideband microwave frequency," Opto-Electronics Review , Volume 24, Issue 4, PP. 191–195, 2016. https://www.degruyterbrill.com/document/doi/10.1515/oere-2016-0021/html
25.	IETE Journal of Research	2026	Q4	Kritika Awasthi, Nishit Malviya, Amitesh Kumar , and Devendra Chack. "Optimisation Framework of Subwavelength Grating Double Slot Waveguides for Biochemical Sensing Applications" <i>IETE Journal of Research</i> 72 (4): 952–64, 2026. https://doi.org/10.1080/03772063.2025.2590749
26.	Laser Physics	2021	Q4	Devendra Chack, Shamsul Hassan and Amitesh Kumar (2021) "Broadband and Mode insensitive MMI based mode power splitter for MDM" <i>Laser Physics (IOP)</i> Volume 31, 126205, December 2021. DOI: 10.1088/1555-6611/ac312c
27.	Optical Engineering	2019	Q4	Abhinav Gautam, Amitesh Kumar , Vishnu Priye, "Microseismic wave detection in coal mines using differential optical power measurement," Optical Engineering . 58(5), 056111 (2019). DOI: https://doi.org/10.1117/1.OE.58.5.056111
28.	Fiber and Integrated Optics	2020	Q3	Amitesh Kumar , Abhinav Gautam and Vishnu Priye "Microwave Photonic Mixer Using DP-DDMZM for Next Generation 5G Cellular Systems", <i>Fiber and Integrated Optics</i> , Taylor & Francis , Vol. 39 No. 4, 149-168, 2020. https://doi.org/10.1080/01468030.2020.1826068

International Conferences:

29. Presented one paper at the 4th International Conference on Photonics, Optics and Laser Technology (PHOTOPTICS 2016, 27-29 February 2016, Rome, Italy).
30. Nitu Kumari, **Amitesh Kumar** and Annapurna Kumari, "Photonic Measurement of Multiple Microwave Frequencies via Frequency Shifting and Four-Wave Mixing in a Semiconductor Optical Amplifier" , *IEEE Microwaves, Antennas, and Propagation Conference (MAPCON)*, Kochi, India, 2025.
31. Sumit Sagar, Jitendra Kumar, **Amitesh Kumar** and Samrat Mukhopadhyay, "Optical and Electrical Performance of Crossed-Ellipsoid GaAs Nanowire Solar Cells," *2025 IEEE 6th India Council International Subsections Conference (INDISCON)*, Rourkela, India, 2025.
32. Shivam Bhutiani, Ilika Mitra and **Amitesh Kumar**, "Performance analysis of an LFM-based FMCW photonic RADAR for multi-target detection," *2025 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT)*, Bengaluru, India, 2025.
33. Sumit Sagar, Manisha Rautela, Jitendra Kumar, **Amitesh Kumar** and Samrat Mukhopadhyay, "GaAs Truncated Cone Nanowire Array-Based Solar Cells with Carrier Selective Contacts", *International Conference on Numerical Simulation of Optoelectronic Devices (NUSOD)*, New Delhi, India, 2024.
34. Deep Pal and Amitesh Kumar, "Designing Hand Glove to Predict Sign Language Using OTDR and Machine Learning", *Conference on Lasers and Electro-Optics Pacific Rim (CLEO-PR)*, Incheon, Korea, Republic of, 2024.
35. Abhinav Gautam, **Amitesh Kumar**, Vishnu Priye and Jaisingh Thangaraj, "Optical Weight Measurement System Using FBG based Edge Filter Detection Technique", *Workshop on Recent Advances in Photonics (WRAP)*, Guwahati, India, 2019.

36. Abhinav Gautam, **Amitesh Kumar**, and Vishnu Priye. "Highly sensitive FBG-based low-strain sensing system using carrier-suppressed phase modulation". SPIE Photonics West, 2 - 7 February 2019, *San Francisco, California, United States*.
37. Abhinav Gautam, Ritu Raj Singh, **Amitesh Kumar**, Jaisingh Thangaraj, Vishnu Priye. "FBG Based Optical Surveillance Network for Oil and Gas Pipelines". Frontiers in Optics/Laser Science 2018, 16-20 Sept. 2018, *Washington, DC, USA*.
38. Abhinav Gautam, **Amitesh Kumar**, Vishnu Priye, and Jaisingh Thangaraj, "Optical Weight Measurement System Using FBG based Edge Filter Detection Technique," 2019 Workshop on Recent Advances in Photonics (WRAP), Guwahati, India, 2019, pp. 1-3.
39. Tanooja Mishra, Abhinav Gautam, and **Amitesh Kumar** "Performance Analysis of Microwave Photonic Filter for Digital Modulation Scheme," 2019 Workshop on Recent Advances in Photonics (WRAP), Guwahati, India, 2019, pp. 1-3.
40. E. S. Rohit, A. Gautam, R. R. Singh, **A. Kumar**, and V. Priye, "Analysis and Optimization of Edge-Filter Interrogation Scheme for FBG Sensors," in Frontiers in Optics / Laser Science, OSA Technical Digest (Optical Society of America, 2018), paper JTU2A.83.
41. Gautam, R. R. Singh, **A. Kumar**, and J. Thangaraj, "FBG based sensing architecture for traffic surveillance in railways," 2018 3rd International Conference on Microwave and Photonics (ICMAP), Dhanbad, 2018, pp. 1-2.DOI: 10.1109/ICMAP.2018.8354567.
42. R. Kumar, **A. Kumar**, and A. Kumari, "Frequency shifter for photonic multiple microwave frequency measurement," 2018 3rd International Conference on Microwave and Photonics (ICMAP), Dhanbad, 2018, pp. 1-2.
43. **Amitesh Kumar**, and V. Priye, "Photonic generation of microwave signal using a dual-parallel dual-drive Mach-Zehnder modulator," in 12th International Conference on Fiber Optics and Photonics (Optical Society of America, 2014), paper S5A-66.
44. **Amitesh Kumar**, R. C. Vissampalli, and V. Priye, "Photonic microwave Up-converter Based on four-wave mixing in an SOA Using single laser source," in 12th International Conference on Fiber Optics and Photonics (Optical Society of America, 2014), Paper S5A-62.
45. **Amitesh Kumar**, R.R. Singh, and V. Priye, "Instantaneous microwave frequency measurement using dual-drive Mach Zehnder Modulator," IEEE Conference, pp. 1 - 4, ISBN: 978-1-4799-6499-4, Dec. 2014.
46. **Amitesh Kumar**, V. Priye, and Kowshik Moyya, "Performance analysis of photonic generated microwave signal using a dual-parallel dual-drive Mach-Zehnder modulator in Dispersive Media," 4th International Conference on Photonics, Optics, and Laser Technology (IEEE, 2016), pp. 266-271, Rome, Italy.
47. Jaisingh T, **Amitesh Kumar**, Vishnu Priye, "Heuristic Approach For Survivability in WDM Optical Networks With The Impact of Four Wave Mixing", IEEE ICMAP,13, December 2013
48. **Amitesh Kumar**, and V. Priye, "Optimization of wavelength converter in WDM networks using genetic algorithm," in IEEE International Conference on Electronics, Computing and Communication Technologies, January, (IEEE CONECCT2013 1569684119) 2013.
49. R.R. Singh, **Amitesh Kumar**, Abhinav Gautam, and Vishnu Priye, "Microwave Frequency Estimation with high Accuracy based on Mach-Zehnder Modulator and Phase Modulator", IEEE ICMAP,15, December 2015.
50. Abhinav Gautam, R.R. Singh, **Amitesh Kumar**, and Vishnu Priye, "Architecture of Optical Sensing and Monitoring for Pipelines using FBG," 3rd International Conference (RAIT 2016), March, 2016.

Book Chapter:

51. Kritika Awasthi, Nisit Malviya, **Amitesh Kumar** (2026). Subwavelength Grating Slot Waveguide Based Refractometric Chemical Sensor with Improved Sensitivity. In: Kumar, D., Kumar, S. (eds) VLSI, Microwave and Wireless Technologies. ICVMWT 2024. Lecture Notes in Electrical Engineering, vol 1484. Springer, Singapore.